AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A radioactive microsphere comprising not less than 99% by weight of ~~a crystal of~~ an oxide crystal ~~of yttrium which contains~~ containing 47% by weight or more of radioactive yttrium, and the balance of inevitable impurities, the oxide crystal consisting essentially of YPO_4 or a mixture of Y_2O_3 and YPO_4, wherein the microsphere is in the shape of a sphere and wherein the microsphere is coated with a film comprising at least one of the compounds selected from the group consisting of silica (SiO_2), titania (TiO_2), alumina (Al_2O_3), iron (III) oxide (Fe_2O_3), silicon nitride (Si_2N_3, SiN, Si_3N_4), aluminum nitride (AlN), titanium nitride (TiN), iron nitride (Fe_2N, Fe_4N), silicon carbide (SiC) and titanium carbide (TiC).

2-3. (Cancelled).

4. (Original) The radioactive microsphere according to claim 1, wherein the microsphere has a diameter of 1 to 100 μm.

5. (Original) The radioactive microsphere according to claim 1, wherein the microsphere has a diameter of 20 to 30 μm.

6. (Cancelled).

7. (Currently amended) The radioactive microsphere according to claim **[[6]]**1, wherein the film has a thickness of 0.01 to 5 μm.

8. (Currently amended) A method of producing a radioactive microsphere, the method comprising the steps of:

~~preparing a microsphere having~~ providing not less than 99% by weight of ~~a crystal of~~ an oxide powder ~~of yttrium which contains~~ containing 47% by weight or more of non-radioactive yttrium, and the balance of inevitable impurities as a starting material;

~~through~~ melting **[[**of an**]]** the oxide powder ~~containing yttrium as a starting material~~ by passing the starting material through a high frequency induction thermal plasma ~~wherein the microsphere is formed~~ to form the oxide powder into a sphere**[[**,**]]**; and ~~followed by~~

irradiating with an effective dosage of slow neutrons to turn the non-radioactive yttrium into a radioactive element.

9. (Cancelled)

10. (Currently amended) The method according to claim 8, further comprising coating the ~~microsphere~~ sphere with a film after ~~preparing the microsphere~~ forming the oxide powder into a sphere and before irradiating with an effective dosage of slow neutrons, the film comprising at least one of the compounds selected from the group consisting of silica (SiO_2), titania (TiO_2), alumina (Al_2O_3), iron (III) oxide (Fe_2O_3), silicon nitride (Si_2N_3, SiN, Si_3N_4), aluminum nitride (AlN), titanium nitride (TiN), iron nitride (Fe_2N, Fe_4N), silicon carbide (SiC) and titanium carbide (TiC).

11-13. (Cancelled).

14. (Currently amended) The method according to claim 8, wherein the starting material is an oxide powder containing ~~yttrium, or~~ yttrium and phosphorous.

15. (Cancelled).

16. (New) A method of producing a radioactive microsphere, the method comprising the steps of:

providing not less than 99% by weight of an oxide powder containing 47% by weight or more of non-radioactive yttrium, an amount of phosphorus and the balance of inevitable impurities, as a starting material;

melting the oxide powder, by passing the starting material through a high frequency induction thermal plasma, to form the oxide powder into a sphere;

heating the sphere in an oxidizing atmosphere; and

irradiating with an effective dosage of slow neutrons to turn the non-radioactive yttrium into a radioactive element.

17. (New) The method according to claim 16, further comprising coating the sphere with a film after the step of heating in the oxidizing atmosphere and before the step of irradiating with an effective dosage of slow neutrons, the film comprising at least one of the compounds selected form the group consisting of silica (SiO_2) titania (TIO_2), alumina (Al_2O_3), iron (III) oxide (Fe_2O_3), silicon nitride (Si_2N_3, SiN, Si_3N_4), aluminum nitride (AlN), titanium nitride (TiN), iron nitride (Fe_2N, Fe_4N), silicon carbide (SiC) and titanium carbide (TiC).